Home Depot, U.S.A.

Operations and Maintenance Plan - Amended
Robinson Brick Company Site

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1.0 INTRODUCTION

Home Depot U.S.A., U.S. EPA-Region 8 (EPA) and the Colorado Department of Public Health and Environment (CDPHE) performed the Robinson Brick Company Site Closure in a defined "shared" and "phased" manner in accordance with the Prospective Purchaser Agreement. This Operations and Maintenance Plan is a requirement under the terms of this agreement.

To facilitate the Operable Unit 9 ("OU-9") Robinson Brick Company Site Closure, Home Depot U.S.A. developed a phased and shared "Closure Work Plan, Construction Specifications, Construction Quality Assurance Plan, and suggested Health and Safety Plan" for the Site Remedial Response Actions. These documents are attached to this Operations and Maintenance Plan by reference and are to be utilized where and when deemed appropriate.

The Home Depot U.S.A. — Robinson Brick Company Site, approximately 17 acres, is located in south central Denver, Colorado at 500 South Santa Fe Drive in the Northwest 1/4 of Section 15 of Township 4 South, Range 68 West ("Site").

This Operations & Maintenance Plan ("Plan") establishes the method by which the Site will be effectively and safely inspected, operated and if required, repaired with respect to identified areas of metal contamination consolidation. The Areas of Consolidation are those areas within the boundaries of the Site that exhibit metal contamination above the EPA and the CDPHE established risk-based clean-up standards. The Area of Consolidation was constructed and closed in conformance with the Shared and Phased Remedial Response Action approved and accepted by the EPA and CDPHE. The Area of Consolidation constructed and closed during the shared and phased remedial response action are shown on the attached Robinson Brick Company Site Remedial Response Action As-Built Drawings R-16 through R-20.

According to a baseline risk assessment prepared by EPA and presented in the Denver Radium Sites OU-9 Robinson Brick Company Site Record of Decision, the only contaminants present in site soils in concentrations which pose significant risks are arsenic, lead, and zinc. Table 1 presents the metal contaminants that were managed and their respective Site "risk-based" clean-up standard and expected contaminant concentration interval present in Site soils. For the purpose of clarity between Site closure documents: the term "soil meeting site screening criteria" represent soil having total arsenic, lead and/or zinc concentrations

(mg/Kg) below the established Site risk-based standard; and the term "soil exceeding site screening criteria" represent soil having total arsenic, lead, and/or zinc concentrations (mg/Kg) equal to or above the established Site risk-based clean-up standard.

TABLE 1

Site Metal Contaminant	Risk-Based Clean-Up Standard (mg/kg)	On-Site Background Concentration (mg/kg)	Highest On-Site Concentration (mg/kg)
Arsenic	79	2	490
Lead	1,000	30	35,800
Zinc	17,000	50	32,050

The Area of Consolidation of Site soils containing these metals is largely confined to fill material. The discolored soil and fill material comprising the Area of Consolidation has been identified as consisting of sand mixed with cinders, charred lumber, glass shards, rubble, brick material, and metal shavings. The fill material that exceeds the site screening criteria within the Area of Consolidation is distinctively dark brown to black in color. In those instances where the alluvium is indicated to be contaminated, it was concluded to be due to mixing of alluvium and the overlying area of contaminated fill materials.

As indicated by the Record of Decision ("ROD") for the Site, the remedial action selected is to prevent direct contact with, or inhalation or ingestion of metals-contaminated soils, in part, by covering the affected areas with a soil cover and an identification barrier. This identification barrier, which also serves as a preferential pathway for diverting the flow of water, is a plastic net covered on both sides with a dark gray geosynthetic fabric.

In addition, the remedial action includes the continuation of down gradient ground water monitoring as a means of checking for contaminant migration toward the South Platte River via ground water and Site institutional controls implemented by the EPA and CDPHE.

Section II of this O&M Plan provides a brief description of the Site History and the description of the Area of Consolidation. Section III summarizes the EPA and CDPHE ground water monitoring plan and its evaluation criteria for characterizing ground water quality with respect to the Site and future remedial re-openers. Section IV of this O&M Plan describes the inspection criteria and objectives. Section V describes the operations and maintenance procedures and practices by which the storm

water management systems shall be maintained. Section VI summarizes the Site contingency plan with respect to control and repair of the Area of Consolidation and its identified soil cover systems. Section VII describes the on-Site area of Radium and Thorium contamination. Section VIII outlines recordkeeping requirements and reporting criteria to be observed during the use of the Site.

Post-Closure — Site Operations and Maintenance Plan Requirements

The Home Depot - Post Closure Operations and Maintenance Plan ("O&M Plan") will be implemented, monitored and recorded except as noted by HOME Depot, U.S.A. The O&M Plan includes requirements for:

- EPA will perform off-site ground water monitoring and reporting;

- An annual inspection and professional engineer's certification that the closure caps are being maintained and operated in accordance with this the O&M Plan and the Record of Decision ("ROD");

- Reporting to EPA and/or CDPHE of any breach, exposure of area of contamination, release of soil ***exceeding*** the site screening criteria, or off-site non-permitted discharge of surface waters that may have come into contact with area of contamination or soils ***exceeding*** the site screening criteria as prescribed by the O&M Plan and the ROD;

- Construction of surface water management systems on the Site in such a manner as not to provide a hydraulic influence to the area of contamination and/or capped Areas of Consolidation of soil that exceed the site screening criteria;

- New construction, re-modeling, and site repair that will generally not be conducted within one foot in any direction of capped Areas of Consolidation;

- Repair work, new construction, or re-modeling that may come into contact with the Site capped Areas of Consolidation of soil exceeding the site screening criteria, will be reported to the EPA and CDPHE prior to such activities being implemented;

- Repair work, new construction, or re-modeling that may come into contact with the capped Areas of Consolidation, will be performed in accordance with the Site Remedial Response Action Closure Specifications, CQA Plan, Closure Work Plan, and Health and Safety Plan, or as modified, with the approval of EPA and CDPHE;

- The management of soil *exceeding* the site screening criteria encountered during repair work, new construction, or re-modeling will be done in accordance with the *Site Remedial Response Action Construction Specifications, Construction Quality Assurance Plan, this Operations and Maintenance Plan and the EPA OU-IX Record of Decision* by removal and placement of those soils in designated Areas of Consolidation on-site or by transportation and management at a permitted Resource Conservation and Recovery Act ("RCRA") Facility; and

- Records of inspections, professional engineer's certifications, and work activities in or near the Site Areas of Consolidation will be maintained by Home Depot in accordance with the *Operations and Maintenance Plan.*

2.0 SITE HISTORY

Since the late 1800's, significant changes have occurred both in physical features and type of industrial operations conducted at the Home Depot - Robinson Brick Company Site location. This section summarizes the history of the site that is assumed to be related to the contamination present.

The Merchant's Mill Ditch (also called the Mulled Ditch or Platte and Denver Ditch) was constructed through the eastern part of the Site in the Early 1870's. The ditch transported water from the South Platte River northward approximately eight miles, then emptied back into the South Platte River near its confluence with Cherry Creek. The ditch was used until 1910, after which time it was filled. No surface evidence of the former ditch is present at the Site; however, it is suspected that the ditch was exposed in the small excavated area in the far northeastern part of the Site. Timbers and layered sediments (possibly ditch fill material) were found in the excavated pit wall, located 20 feet west of the east property boundary railroad right-of-way. Historical records show that the ditch passed under the railroad tracks and continued northward. The buildings of the National Radium Institute ("NRI") were constructed over the abandoned ditch in 1914 and 1915, several years after the ditch ceased operation. It is not certain when those portions of the ditch that lie away from the NRI buildings were filled.

The Bailey Milling, Amalgamating, and Mining Company was incorporated in 1884. By 1885, the Bailey Reduction Company was also incorporated and the Bailey Smelter had been constructed as early as 1882. The location of the smelter was only about 100 feet east of the then eastern shoreline of the South Platte river at the edge of a meander at the site of the Old Spanish or Mexican Diggings, where a minor amount of gold was recovered in 1857. The north end of the large meander of the South Platte River was also where, by 1890, water was diverted from the river into the Water Power Canal (American Water Work Company), which supplied water to Lake Archer about 1 mile to the north.

For most of its operating years, the Bailey Smelter was leased to and operated by H.A.W. Tabor as the Gold and Silver Extraction Company. The smelter processed carbonate ores from Leadville mines until the mid-1890's when operations ceased because of the "silver panic" and "mining crash" of 1893. Large quantities of waste material from the metal recovery operations were probably disposed into the nearby river channel. The Bailey Smelter was dismantled around 1900.

By 1903, the Colorado Zinc Company had constructed a mill on and just east of the site of the Bailey Smelter. By 1908, the size of the original mill building had doubled. Ore processed by this operation continued to be lead-, zinc-, and cadmium-rich carbonate ores from the Leadville area mines. The increase in size of the Colorado Zinc Company operations coincided with the progressive westward movement of the South Platte River channel. It is likely that this channel movement was partly the result of zinc mill process wastes, which were probably used as fill material. Zinc milling operations continued until about 1910. However, by 1913, when National Radium Institute first became interested in the site, the zinc mill had burned and was in ruins.

The Sutton, Steele, and Steele Mining and Milling Company ("SSS") operated a dry concentration process and custom mill from 1911 to 1917 at the far north end of the Site. This company may have been contracted to grind radium ores before National Radium Institute grinding plant was built. Uranium oxide concentrate for the National Radium Institute was stored in SSS buildings. Waste material from SSS operations may be present as fill material in the old Merchant's Mill Ditch at the north end of the Site and on the railroad property to the northeast.

The National Radium Institute ("NRI") produced 8.5 grams of radium at the Site from 1914 to 1916. The NRI leased a portion of the Site from the adjacent Sutton, Steele, and Steele Mining and Milling Company, and constructed the old or first experimental plant for radium processing in the east of the NRI buildings area in 1914. The success of the first plant resulted in the construction in 1915 of a larger, second plant to the south of the NRI buildings area. Minerals Recovery Company purchased the NRI plant late in 1918 but went out of business by 1920. The quantity of radium produced by this company is unknown. Production, if any, occurred in 1919 when the annual report for that year stated that the company has "a quantity of radium in process".

The National Radium Institute ("NRI") operated its ore extraction facility at West Virginia and South Elati Streets, which corresponds to the present-day location of the Site. Radium, vanadium, and uranium were extracted from carbonate ore at the facility. By June 1914, the NRI plant had begun full-scale production; in 1916, radium operations ceased. However, some fractioning operations at the NRI plant may have continued until 1918. The NRI operations ceased shortly thereafter.

Prest-O-Lite Company used an area in the southern part of the Site in the mid- and late-1920's to manufacture and service storage batteries. The company also made carbide and acetylene by a process that involved calcium carbide and hydrochloric acid. During approximately the same

time period, the old NRI facility was occupied by the Mineral Products Company which was in the business of treating and sacking metallic ore insulation. From 1927 to about 1930, the NRI facility was used by U.S. Gasoline Corporation as an oil reclamation plant. Security Petroleum used the site (specific use is not known) from 1932 to 1936. Dated materials found during the 1988 EPA OU-9 Remedial Action activities indicate that a part of the site was used as a landfill in the early 1930's (primary the south part of the main Site west trench).

The NRI buildings were used as a warehouse in the early 1940's. By 1942, the Colfax Pressed Brick Company had begun operations on the Site. This company was the predecessor of the Robinson Brick and Tile Company, which is now the Home Depot U.S.A. - Robinson Brick Company Site, the current owner of the Site. In 1947, Western Lumber Company and Robinson Brick Company jointly occupied the premises at 500 South Santa Fe. Robinson Brick Company acquired sole occupancy of the site in 1948, and Western Lumber Company moved to 400 S. Santa Fe, which was later acquired by Robinson Brick Company in 1956. The second NRI building had been demolished by 1956 and a grinding plant had been constructed by Robinson Brick Company in the same location. The grinding plant and two small remaining NRI buildings were demolished as part of EPA Remedial Action activities in 1988. Robinson Brick Company, a manufacturer of bricks and tiles, has continued to occupy the Site through the 1980's. Production ceased in 1984 at the South Santa Fe Drive location, when Robinson Brick Company moved to a more modern facility.

In 1979, the EPA discovered the presence of long-forgotten radium processing sites, which were active in the late 1800's and turn of the century. A total of 31 sites became known as the Denver Radium Site, which was placed on the National Priorities List ("NPL") in September 1983. EPA released a remedial investigation for the Site in April 1986, and a Feasibility Study in September 1986. The EPA Record of Decision ("ROD") was issued on September 30, 1986. The remedy for cleanup of the site called for excavation of radium-contaminated soils to meet cleanup levels in 40 CFR 192. Radium remedial action began in May 1988 and was completed in March 1991. The Phased and Shared Remedial Response Actions for the remaining heavy metals contamination began in October of 1995 and were completed in April of 1996. The construction of the Home Depot Store was completed in November 1996 on the portion of the Site east of the Area of Consolidation. Today, the Area of Consolidation is maintained beneath the parking lots located west of the Home Depot Store and beneath portions of the area located adjacent and south of the storm water management retention basin, reference Site remedial response action drawings R-16 through R-20.

The Site property covers 17.3 acres in an area of Denver zoned for industrial use. The Home Depot U.S.A. - Robinson Brick Company Site is bounded on the west by South Santa Fe Drive and on the east by several north-south railroad lines that run through Denver, including lines owned by the Southern Pacific Railroad. Northwest of the property is the Regional Transportation District bus barn, which is closed. To the south of the property are two currently operating industrial businesses.

3.0 GROUNDWATER MONITORING PROGRAM

EPA Region 8 and the Colorado Department of Public Health and Environment (CDPHE) are responsible for groundwater monitoring of the Denver Radium Site Operable Units IV and IX off-site wells. The alluvial aquifer is not considered a potential drinking water source, so the objective of the groundwater monitoring is to verify that contaminants contained in the Area of Consolidation (AOC) are not reaching the South Platte River in detrimental concentrations. Monitoring is performed twice each year (in April and October), and EPA reports on the findings. As a provision of the Prospective Purchaser Agreement, EPA shall submit this report, which will include a statement on any increase in contaminant concentrations, to Home Depot, U.S.A.. Well construction information and analytical data from 1995 and 1996 have been provided to Home Depot, U.S.A., and will be maintained as part of the operating records.

The analytic data contained in these reports is the means by which the Record of Decision may be reopened. The Home Depot should evaluate each report for changes in heavy metal concentrations over time. If the report indicates an increase in contaminant concentrations, Home Depot may contract a third party to validate the findings or to address possible sources of contamination before EPA action levels are reached.

4.0 SITE INSPECTION

Biannual inspections of store facilities and site utilities shall be performed by The Home Depot to insure that the closure caps over the Area of Consolidation are being properly maintained. These inspections should be performed in both April and October and shall include the following:

- Inspect the water main and irrigation system to verify that there are no leaks in the systems which could lead to infiltration of water into the Area of Consolidation;

- Examine all components of the storm water retention basin, including the storm sewer lines, to insure that proper water flow is being maintained;

- Check the condition of the parking lot, including asphalt and concrete curbing. Cracks or depressions could divert storm water runoff into the Area of Consolidation;

- Insure that the vegetation is being sustained for the purposes of erosion prevention and preferential drainage pathways for surface water.

Attached as Appendix A is a checklist which can be followed for each inspection. Any necessary maintenance or repair should be tended to promptly. All corrective action or preventative maintenance should be recorded and attached to the inspection report. Below is a description of specific inspection procedures.

4.1 WATER MAINS

There are two water mains in use at the site, a 4-inch potable water supply and an 8-inch line for fire water. Both lines cross above the Area of Consolidation within the constructed utility corridor, so it is extremely important to verify that there are no leaks by which a excessive amount of water could infiltrate through the contaminated material below.

The fire water system can be inspected by checking that there is at least 80 pounds per square inch of water pressure at the interior sprinkler connection. There is an alarm present at this connection which will sound if the pressure drops below a certain level, so the inspection is actually a reassurance that the system is functioning properly.

The potable water system should be inspected by Denver Water if any of the following three conditions should arise:

- Home Depot notes a significant excessive increase in water usage
- Visual observations at the site identify excessive areas of saturation
- As deemed necessary by the inspecting Professional Engineer.

This inspection is a free service, but it will have to be initiated by a representative of Home Depot. The inspection will entail a temporary shutdown of the potable water to the building, so it should be scheduled after hours or during an off-time. Scheduling for leak detection can be set up by calling Denver Water customer service at (303) 893-2444. The inspection form shall be kept as part of the operating record.

In the interim between inspections, a water leak may also show up as super-saturated soils in a vegetated section of the east parking lot or at the entranceway from Santa Fe Blvd. The saturation could also be a result of a leak in the irrigation system, so if the problem persists when the irrigation system is shut down, an inspection of the potable water main may be justified.

A portion of each water main is the property of both Denver Water and The Home Depot, so the location of the leak will determine which party is responsible for the repair. Regardless of who is responsible for repair, it is the responsibility of The Home Depot to ensure that construction is performed under the supervision of The Home Depot and in accordance with Section VI of this Operations and Maintenance Plan. Documentation will include repair procedures, construction and survey data, and an estimated quantity of water loss.

4.2 *IRRIGATION SYSTEM*

The irrigation system is tied in to the potable water line along the east wall of the building. A control unit actuates a solenoid to allow flow from the main water line into the system. This tie in and the underground piping to the system should be checked while the system is charged, but while the solenoid is closed. In this state, the inspector should observe no flow at the water meter from the main line into the system; if flow is registered, there is a leak in the piping. If a leak is discovered, the valve at the connection should be closed, and repair should be initiated within 48 hours and completed within 14 days. Excavation in this area will not breech the Area of Consolidation (AOC), and as such, no regulatory action must be taken prior to the work. However, water escaping from this line will flow along a southwest gradient towards the Platte River on

a direct path through the AOC. Thus, a report detailing the nature and estimated quantity of the leak shall be documented and included in the report.

Inspection risers are installed at various points along the sprinkler system piping and can be easily located by their green plastic covers. These risers should be inspected for leaks and/or damage to the underlying valves. The lines may be located within the boundary of the AOC, but are buried above the ID barrier. Repair should be conducted with care to insure that the underlying ID barrier and soil cap system is not damaged. If damage to the ID barrier and soil cap occurs or is suspected, repair should be performed in accordance with Section VI of this Operations and Maintenance Plan. All construction and repair, whether it penetrates the AOC or not, must be documented in report form and attached to the inspection sheet and included in the operating records for the Site.

All sprinkler heads on the site should be visually inspected for broken parts. Flow through the heads should be observed to certify that 1) the pop-up mechanisms are functioning properly, and 2) that water is being sprayed, not simply free-flowing. Each head should be securely fastened to the leader pipe. All broken pieces should be replaced or repaired and the system re-tested.

Sprinkler lines in the planters should be checked that the plastic ends have not been broken off or obstructed. If there is limited or no flow to a single planter or a group of planters, there is a possibility that a main line has been broken and will need to be replaced. Water flow shall be shut down until the problem has been resolved.

4.3 *RETENTION BASIN*

There are two inlets to the retention basin, draining the west and north sections of the parking lot. A storm water system outlet drain ties into the Denver City storm water system. All of these lines are protected by steel grated covers which must be maintained in good condition and free of obstructions. Any debris which has accumulated at the inlet/outlet shall be removed. A visual inspection of the horizontal pipe runs shall be conducted at the end of each storm event, but not less than twice a year. This inspection should confirm that the pipe is free of silt buildup. The interior surface should not be visibly cracked and the pipe run should progress along a straight line at an even slope. Any deviations should be reported to the engineer so a full assessment can be done and corrective action taken.

A comprehensive visual inspection on the interior of the drainage lines should be conducted if any of the following conditions exist:

- Ground surface settlement and depressions identified above the storm sewer
- In adequate or blocked flow observed at the inlet/outlet pipes of the retention basin, surface inlet grates or within manholes during or after a rainfall event
- Overall deterioration of site conditions
- As deemed necessary by the inspecting Professional Engineer.

The inspection shall include examination of the interior wall of each section of pipe for hairline cracks. Each joint should be inspected to insure it is properly seated and the seal intact. The elevation and grade shall be surveyed and compared to the Site as-built drawings to verify that the structure has not shifted and that it maintains a slope suitable for drainage. The visual inspection can be done either by a manned confined space entry or a remote camera hookup. Elevations shall be recorded after each inspection as an update to the Site as-built utility drawings.

4.4 *PARKING LOT*

The west section of the parking lot is designed as a barrier directly above the Area of Consolidation (AOC). Careful inspection must be completed to insure that damage to the asphalt pavement has not occurred to the extent that the asphalt layer would promote drainage into the AOC. Separation of the pavement from concrete curbs and gutters is also a concern in that a preferential pathway for surface water to the AOC may be created. Surface repairs will be made by a licensed contractor and in accordance with Section VI of this Operations and Maintenance Plan in such cases where construction may breech the soil cap.

Ripples in the parking lot asphalt present another problem. A small surface depression is characteristic of poor soil compaction, but may also be an effect of soils washing away because of subsurface water flow. A larger depression may be indicative of a collapsed underground utility line; any such depression should be compared to the utility locations as shown on the Site as-built drawings. Utilities within the aerial boundary of the AOC run through corridors of clean material so that repair and maintenance may be done without a breech of the contaminated area, but because of the proximity to the soil cap system, all work shall be executed in accordance with Section VI of this Operations and Maintenance Plan.

4.5 *LANDSCAPING*

Vegetation plays an intricate part in providing erosion protection for the soil cap system. Inspection should verify that there are no directly exposed soils either from repair work or poor maintenance. It is especially important to upkeep the sodded area near the retention pond so that runoff capacities are maintained. Inspection should also be done on the planters to make sure that trees and shrubs are being properly maintained to aide in excess water absorption. Over time, tree rooting structures may penetrate the soil cap system. If it becomes necessary to replace any trees, care must be taken to insure that replacement is done without damaging the underlying AOC ID barrier.

After each inspection, the completed report sheet and all attachments should be placed with the operating records in a file labeled "FOR REVIEW." All construction or repair done as a result of or separate from the inspection should be described in report form and included in the same file. Repair or construction done in conjunction with a breech of the soil cap should be reported in accordance with Section VI of this Operations and Maintenance Plan.

Each June, a Colorado-licensed professional engineer, either in-house or independent, shall review the operating records on behalf of The Home Depot to certify that the inspections were carried out and corrective action was taken when necessary. The engineer's certification should cover the potential influence of any problem areas cited during the inspections. The certification will also include a review of all on-site work activities conducted during the year. Interviews with inspectors, employees, or contractors may be necessary to identify all pertinent information. A copy of the engineer's certification will be submitted to the Colorado Department of Public Health and Environment and to EPA Region 8.

The Storm Water Management System Retention Basin was constructed during the remedial response action and is located on the northern most portion of the Site. Within the Area of Consolidation, "utility corridors" were constructed for storm water collection piping which was placed during the construction of the Home Depot store. The Retention Basin is designed in such a manner as to collect site surface water via underground storm water piping, to retain and hold the collected storm water, and to release collected storm water to the City and County of Denver storm water management system in a controlled manner. The storm water retention and collection system and corresponding utility corridors are illustrated on the Site Remedial Response Action As-built Drawings. The Home Depot constructed storm water collection structures and installed reinforced concrete pipe within the "utility corridors" as shown on the As-Built Drawings. Because of the close proximity to the Area of Consolidation, inspection of the storm water management system is to be performed as described below to ensure that Area of Consolidation has not been damaged due to excessive storm water events.

Surface water shall be managed in such a way as not to provide a hydraulic influence to the Area of Consolidation. The retention basin is designed to meet capacity for surface water drainage of the entire Site. Vegetation shall be maintained at all times to limit surface water channeling and topsoil erosion; however, it is inevitable that erosion will occur over time, leading to silt buildup in the retention basin. The Home Depot is responsible for maintaining drainage capacities in the retention pond and as such, silt buildup shall be measured and documented once each year in conjunction with an inspection event. The measurement should be taken at the deepest point of the pond and recorded in inches of buildup.

When silt in the retention basin has built up to a level such that the design capacity has been reduced approximately ten percent, desilting should be performed in such a way as to remove runoff deposited soils only - existing materials should not be disturbed. Visual inspection should be adequate for the removal, and elevations can be verified if necessary against the Site as-built drawings.

Storm water management must also be implemented during on-site construction above the AOC. If substantial sod is removed for any reason, a drainage system must be implemented to divert surface water away from the exposed topsoil. If digging is necessary for subsurface inspection

or repair, barriers must be set in place to prevent surface water from flowing into the excavation. If the hole is going to be left open for an extended period, a tent or cover may be necessary to prevent direct exposure to precipitation. Water which may come into contact with *soils exceeding site screening criteria* must be managed in accordance with *Section VI of this Operation and Maintenance Plan.*

Inspection of the parking lot should be done in accordance with *Section IV Part C of this Operations and Maintenance Plan.* However, the condition of the asphalt and curbing also has surface water management considerations. The concrete curbing and the grade of the asphalt pavement were designed to promote efficient drainage of surface water. Depressions or humps in the asphalt layer could inhibit preferential flow patterns and must be repaired as appropriate. Cracks in the asphalt could cause erosion in the subsurface, the result being either infiltration of water into the Area of Consolidation (AOC) or subsidence and undermining of the asphalt surface. These effects may not be apparent by a cursory visual inspection, so a careful examination should be done before deciding on repair procedures. Curb and gutters may also become damaged over time. Broken concrete will allow water to flow into the subsurface and damage to gutter systems could impede water flow into the drainage lines. Repair work which may lead to a breech in the soil cap system must be done in accordance with the Contingency Plan as outlined in *Section VI of this Operations and Maintenance Plan.*

6.0 CONTINGENCY PLAN

In the event that a breach of the Area of Consolidation has occurred due to on-site operations, site re-modeling or new construction, parking lot repair or modification, storm events or other natural phenomena, and/or any other activity that has damaged the identification barrier or penetrated the Area of Consolidation cover system - the following procedures will be implemented.

A breach in the soils cover/identification barrier system is that situation in which physical damage, physical alteration, movement and/or displacement of cover soils and identification barrier has occurred. A breach in the soils/identification barrier system may occur by the infiltration of surface water or irrigation water into the Area of Consolidation.

6.1 INSPECTION

Procedures for the routine and systematic inspection of the soils cover and identification barrier system shall be employed as outlined in *Section IV* of this *Operations and Maintenance Plan*. Upon discovery of a possible breach of the soils cover/identification barrier system or identification of site conditions that may create a breach of the soils cover/identification barrier system, site contingency plan notification and response actions shall be implemented.

6.2 EMERGENCY CONTAINMENT AND SITE CONTROL

When the area in which a breach of the Area of Consolidation has been identified or in the situation where suspect damage to the soils cover/identification system has been isolated, the following listed containment and control procedures will be implemented. If specific containment and control methods and procedures provide multiple purposes, duplicative procedures are not required. The containment and control procedures implemented will be described and reported as part of the *notification* provided to the environmental agencies.

1. Diversion of storm water flows away from the area in which the breach of the Area of Consolidation was identified. Rerouting of storm water must be performed in such a manner as not to divert the collected storm water off-site. All diverted storm water must be directed to the Storm Water Retention Basin located on the northern portion of the site.

2. Sources from subsurface storm water collection and conveyance systems, and irrigation water piping systems shall be isolated by valving, blind flanging, sand bagging or by other appropriate means. Isolation of the storm water collection system or irrigation piping systems may be necessary to mitigate the sources by which the Area of Consolidation may be breached and to control the flow of liquids that may give means by which contaminants found in the Area of Consolidation become mobile with local ground water flows.

3. Exposed soils that ***exceed the site screening criteria*** shall be isolated, barricaded and means of access controlled in a manner by which the public health and the environment are protected. Exposed surfaces shall be covered with protective coverings (synthetic or soils that ***meet site screening criteria***) during those periods in which containment, repair or response action activities are not being performed.

4. During repair work of the Area of Consolidation soil cover/identification barrier systems, provisions shall be made for dust control and for "special" collection and containment of contact storm water that has or may have come into contact with soils that ***exceed the site screening criteria***. The use of existing constructed storm water management systems shall not be used for emergency response containment and control. Separate or "special" collection and containment systems shall be employed during contingency response for the breach of the Area of Consolidation. "Special" collection and containment system description shall be summarized in the *notification* to environmental agencies.

5. The portion of the Area of Consolidation under repair shall be segregated and physically isolated in such a manner as to limit access to the area of repair to authorized and trained personnel. Public access to the repair work area of the Area of Consolidation shall be precluded by physical means and posted with the appropriate warnings.

6.3 *NOTIFICATION*

Within 48-hours of determination that a breach to the soil cover/identification barrier system has occurred or that there is a situation in which the soil cover/identification barrier system may be damaged, the following regulatory agencies will be notified in writing. Notification by telephone may be made for information purposes only. Written notification or facsimile confirmed by receipt shall be submitted within 48-hours of such determination. Evidence (certified mail return

receipt or signed receipt) of notification shall be maintained in the Operations & Maintenance Records as documentation of proper notification.

Send written notifications to:

Colorado Department of Public Health and Environment
Hazardous Materials Waste Management Division
Remedial Programs
Building B
Denver Radium Sites - Operable Units IV & IX
~~4500~~ Cherry Creek Drive South
Denver, Colorado 80222-1530

EPA has specifically asked NOT to be notified of such an occurrence.

6.4 *RESPONSE ACTION AND REPAIR, RESTORATION, MODIFICATION OR CONSTRUCTION OF THE AREA OF CONSOLIDATION*

Repair, restoration, modification or construction of the Area of Consolidation shall be in full conformance with the Robinson Brick Company Site Remedial Response Action Work Plan, Design, Specifications and Drawings.

1. Area of Consolidation soils that ***exceed the site screening criteria*** shall be handled, placed, covered and identified in the same manner as originally constructed.

2. A survey by a State of Colorado licensed surveyor, shall be performed to delineate the area of repair, restoration, modification or construction of the Area of Consolidation. Information obtained from this survey shall be used to graphically illustrate the area of repair, restoration, modification or construction on the Site "As-Built" drawings.

3. Materials used in the construction of the repair, restoration, modification or construction of the Area of Consolidation shall be at a minimum the same type and quality as noted in the Robinson Brick Company Remedial Response Action construction specifications. Documentation shall be provided attesting to specification conformance and shall be placed into the operating record for this *Operations and Maintenance Plan.*

4. Protective soils cover for the Area of Consolidation repair, restoration, modification or construction shall be laboratory analyzed to verify that the cover soils do not *exceed the site screening criteria*.

5. A photographic and/or video record shall be maintained for any repair, restoration, modification or construction of the Area of Consolidation. The photographic or video record shall be append to the Report generated as documentation to support conformance with the Robinson Brick Company Remedial Response Action construction specifications in the repair, restoration, modification or construction of the Area of Consolidation.

6.5 *MANAGEMENT OF SOILS EXCEEDING THE SITE SCREENING CRITERIA*

Management of soils that *exceed the site screening criteria* shall be managed in a manner consistent with the Robinson Brick Company Remedial Response Action Work Plan, Drawings and Construction Specifications.

1. Where possible, soils that *exceed the site screening criteria* shall be place within the limits of the Area of Consolidation as illustrated on the drawings and specified in the construction specifications.

2. In those cases where soils that *exceed the site screening criteria* cannot be placed within the limits of the Area of Consolidation, provisions to extent the Area of Consolidation may be implemented with the concurrence and approval of EPA and CDPHE. Under no circumstances shall the extent of the Area of Consolidation be extended without such governmental environmental agency concurrence and approval.

3. In special circumstances in which soils that *exceed the site screening criteria* cannot be managed on-site within the Area of Consolidation, extended or not extended, the excavated, removed or managed soils that *exceed the site screening criteria* shall be transported, treated and disposed of at a RCRA Treatment, Storage and/or Disposal Facility as provided for by the Record of Decision and as regulated by 40 CFR Subparts 261, 262, 263 and 264 (6CCR1007-3 Subparts 261, 262, 263 and 264).

4. Documentation of analytical analyses and the on-site and/or off-site management of soils that *exceed the site screening criteria* shall be included in the Report summarizing the repair, restoration, modification or construction of the Area of Consolidation.

Beneath the Area of Consolidation Contingency Area and beneath portions of the Storm Water Management System are areas in which radium and thorium have been identified. The soils and material contaminated with radium and thorium are located as illustrated on the Robinson Brick Company Remedial Response Action Drawings and at a depth that would preclude the inadvertent excursion into the area of radium and thorium contamination by repair, restoration, modification or construction of the Area of Consolidation. This paragraph is written to identify to the operator of the Home Depot Site of the existence of this area of radium and thorium contamination. **UNDER NO CIRCUMSTANCES IS THIS AREA TO BE DISTURBED OR EXCAVATED.**

All site facilities and infra-structure are located above the area of radium and thorium contamination. In fact, the area of radium and thorium contamination is located beneath the existing water table as described by the remedial response documentation supporting the closure of EPA Denver Radium Sites — Operable Units IV and IX. Therefore, the need to perform site operations and maintenance in this area is not necessary nor is it practical.

Records from building construction outside of the Area of Consolidation (AOC) shall be obtained from the general contractor. These records should include a certification the ID barrier and soil cap were not disturbed at any time during repair, re-modeling, or new construction. If damage occurred, a report shall be completed in accordance with *Section IV of this Operations and Maintenance Plan*, describing the action taken for repair and certifying that the work was completed in conformance with the AOC specifications and drawings.

Records of inspections, professional engineer's certifications and work activities shall be maintained for a period of seven (7) years as required under the Prospective Purchaser Agreement. These records, along with the Robinson Brick Company Remedial Response Action As-Built Drawings, shall serve as an operating record of this *Operations and Maintenance Plan*. Updates to underground utilities and storm water drain piping shall be marked as appropriate on the Site "as-builts." In the case of a breech in the soil cap system, documentation of notification, surveying records, materials, analytical information, and photographic or video records shall be included. The annual ground water monitoring report as submitted by EPA shall be included, as well as documentation on the potable water line inspection as obtained from Denver Water. All records shall be housed so as to permit access to authorized personnel only.

A copy of the certified Inspection Reports shall be distributed once a year to both EPA-Region 8 and to CDPHE for their records. The addresses are listed below.

U.S. EPA - Region 8
Superfund Branch, Mail Drop P416
999 18th Street
Denver, Colorado 80202-1538

Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
HMWMD-RP-B2
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530
80246-

The Home Depot
500 S. Santa Fe Drive
Biannual Inspection Record Sheet

Date:_____

Inspector (print):_____

Note: All inspections are to be done in accordance with *Section IV of the Operations and Maintenance Plan* as held by Home Depot, Robinson Brick Company Site.

SYSTEM DESCRIPTION	INSPECTION PROCEDURE	INITIAL
Water Mains		
Fire Water System	Pressure in line	psi _____
Potable Water System	Annual inspection by Denver Water	Date _____
Irrigation System		
Irrigation Tie In	Observe water meter for zero flow while system charged	_____
Inspection Risers	Remove covers and examine for leaks	_____
Sprinkler Heads	Replace/repair broken parts	_____
Sprinkler Flow	Check individual planters for full flow	_____
Retention Basin		
Inlets/Outlet	Remove debris from grates	_____
Storm Water Pipe Runs	Inspect for silt buildup, cracks, and pipeline settling	_____
Comprehensive Inspection	Date of last comprehensive inspection, as described in Section VI Part C of O&M Plan	_____
Drainage Capacity	Check depth of silt buildup in Retention Basin (once per year)	inches _____
Parking Lot		
Asphalt Pavement	Check for asphalt damage or separation of asphalt from concrete	_____
Concrete Planters	Check for broken or sunken concrete	_____
Landscaping		
Sod	Check for general upkeep of sodded areas	_____
Planters	Check condition of trees and shrubs. Replace rocks as necessary	_____
Other Observations		
Erosion, depressions, debris, trash, exposed ID barrier, etc.		_____

All corrective action shall be performed and documented in accordance with *The Home Depot - Robinson Brick Site Operations and Maintenance Plan.* All construction or repair performed in conjunction shall be attached to this inspection report and maintained in the "For Review" file of the operating record.

Inspector's Signature _____

Home Depot Store Manager _____

cc: EPA-Region 8, CDPHE